

their best to make the water of these rivers unfit for human consumption.

Severe epidemics of typhoid fever in the lake cities have for years past warned these communities that, while they were spending hundreds of millions on their streets and buildings and in other ways adding to the comfort and convenience of their inhabitants, the most vital consideration of all, that of public health, was being grossly neglected. If the International Joint Commission should achieve nothing more than to awaken the cities of the Great Lakes to the vital importance of protecting their water supplies, it will have more than justified its existence.

Last year the Commission took up the second branch of the pollution investigation, and as an initial step held a conference in New York with a group of sanitary engineers, including men of international standing.

As a result of this conference, and the subsequent deliberations of the Commission, it was decided to adopt, tentatively at least, certain fundamental principles upon which the experts were in agreement. The most vital of these principles is that, while in certain cases where the ratio of water to volume of sewage is unusually large, the discharge of crude sewage into boundary waters may be without danger, "effective sanitary administration requires the adoption of the general policy that no untreated sewage from cities or towns shall be discharged into the boundary waters." The other principles relate more specifically to methods of sewage purification and water purification.

Engineering parties are now stationed at Buffalo and Detroit, under the direction of Mr. Earle B. Phelps, collecting data to guide the Commission in answering the second branch of the investigation, and in making its final report to the two governments.

The life of the Treaty, and, therefore, of the International Joint Commission, is five years from the date of the exchange of ratifications, and "thereafter until terminated by twelve months' written notice given by either high contracting party to the other." It, therefore, may be denounced by either side any time after May 5th of the present year, but it is safe to say that, in the light of what the Commission has already accomplished, directly and indirectly, in settling questions pending between the peoples of the United States and Canada, and preventing disputes regarding the use of boundary waters, and in view of its value to both countries in the peaceful and equitable disposition of the countless similar questions that must inevitably arise in the future, neither the Government of Canada nor that of the United States will be disposed to put an end to either the Treaty or the Commission, certainly not while the present happy relations exist between the two countries—and let us hope that those relations will be perpetual.

There are 2,800 miles of water mains in New York City's water supply system, exclusive of conduits and tunnels.

Work on the Vancouver terminals of the Canadian Northern Pacific is now under way. To date over 2,000,000 yds. out of a total of 3,250,000 to be reclaimed at the head of False Creek, have been filled in. Bids are being received on a reinforced concrete sea wall, which will be built to close the head of the creek from tide water. The specifications include the following quantities: foundation excavation (wet) 450 cu. yds.; concrete crete, 4,950 cu. yds.; reinforcing steel, 305,000 lbs.; asphalt, 2,700 sq. yds.; creosoted fir piles, 12,200 1-ft.; asphalt, 2,700 sq. yds.; rock fill, 15,500 cu. yds.; square timber, No. 1 common, 19,500 f.b.m.; iron in timber including U-bolts, 5,500 lbs.; 255 spring coils.

ACTIVATED SLUDGE INSTALLATION AT MILWAUKEE.

At the recent convention of the American Society of Municipal Improvements, Mr. T. C. Hatton, chief engineer of the Milwaukee Sewerage Commission, described in detail the large plant under construction for the treatment of the city's sewage by the activated sludge process. Mention has already been made in these columns of the experimental work carried on there last March. The new plant, designed to treat 1,600,000 gallons of sewage daily, is a direct outcome of the results obtained. If the new installation proves satisfactory it is the intention of the commission to extend it to a capacity sufficient to treat the city's entire sewage.

The first experimental tanks were of the fill-and-draw type, but the new works are of the continuous flow type, with a 4-hour period of aeration and a 25% activated

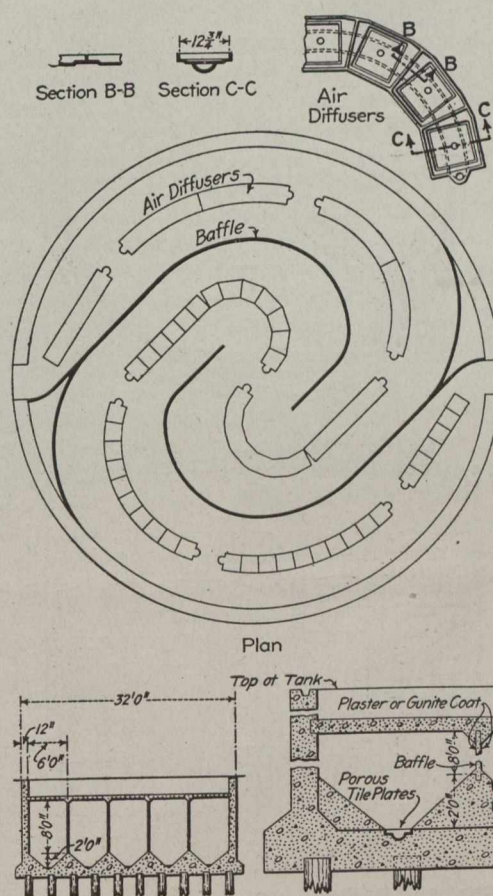


Fig. 1.—Details of Tank Bottom, Showing Arrangement of Baffles and Air Diffuser Plates

sludge content. There are 11 tanks, each 30 feet in diameter, and constructed of concrete.

In his paper Mr. Hatton states that the experiments with the fill-and-draw method gave good results when the sewage temperature was 50° F. or over; at smaller cost than any other process tried by the commission. Thereupon it was decided to try the continuous flow method. These experiments have been under way since early in July and were started with sludge from partly fresh and partly Imhoff tank sewage. The latter sludge, being anaerobic, had to be converted into aerobic sludge before activated sludge was produced. It was run into the new tank and fresh sewage added every 8 or 10 hours. The mixture was aerated by air at 5 lbs. pressure. After 6 or